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AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

# TEST RESULTS OF STEEL

| | | | |
|---|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** | **Date: 08-02-17** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. | |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. | |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. | |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. | |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/135/2016-17 | |
| **Source of Sample** | : | Sample supplied by Agency | |
| **Sample Condition** | : | Satisfactory | |
| **Date of Receipt** | : | 01-02-17 | |
| **Sample ID No** | : | 2017-02-01-01/05 | |
| **Sample Type** | : | Bhuwalka Fe 500 | |
| **Reference to BIS codes** | : | IS 1786-2008 | |
| **Date of test:** | : | 04-02-17 | |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Weight of the sample (kg/m) | Yield stress ($N/mm^2$) | Tensile strength ($N/mm^2$) | Elongation (%) |
|---|---|---|---|---|---|---|---|
| 1 | Bhuwalka | Fe500 | 8mm | 0.392 | 537 | 655 | 20.0% |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Bend test | Rebend test |
|---|---|---|---|---|---|
| 1 | Bhuwalka | Fe500 | 8mm | Satisfactory | Satisfactory |

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Samples will be disposed after 30 days from the date of issue of test certificate

**Prepared By:**
Harshitha

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

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FOR CIVIL Pro.

**R KARTHIK RECHAN**
**Authorized Signature**
**Quality Manager**


*End of Report*

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

# TEST RESULTS OF STEEL

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 08-02-17** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/135/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/06 |
| **Sample Type** | : | Bhuwalka Fe 500 |
| **Reference to BIS codes** | : | IS 1786-2008 |
| **Date of test:** | : | 04-02-17 |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Weight of the sample (kg/m) | Yield stress ($N/mm^2$) | Tensile strength ($N/mm^2$) | Elongation (%) |
|---|---|---|---|---|---|---|---|
| 1 | Bhuwalka | Fe500 | 10mm | 0.615 | 562 | 672 | 21.0% |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Bend test | Rebend test |
|---|---|---|---|---|---|
| 1 | Bhuwalka | Fe500 | 10mm | Satisfactory | Satisfactory |

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# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

# TEST RESULTS OF STEEL

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 08-02-17** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/137/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/07 |
| **Sample Type** | : | Bhuwalka Fe 500 |
| **Reference to BIS codes** | : | IS 1786-2008 |
| **Date of test:** | : | 04-02-17 |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Weight of the sample (kg/m) | Yield stress ($N/mm^2$) | Tensile strength ($N/mm^2$) | Elongation (%) |
|---|---|---|---|---|---|---|---|
| 1 | Bhuwalka | Fe500 | 12mm | 0.883 | 572 | 691 | 20.0% |

| Sl.No | Identification of sample | Grade of the sample | Diameter of the steel bar | Bend test | Rebend test |
|---|---|---|---|---|---|
| 1 | Bhuwalka | Fe500 | 12mm | Satisfactory | Satisfactory |

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CIVIL Pro Sig..... Date..... BANGALORE

**R KARTHIK RECHAN**
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**Quality Manager**

**Prepared By:**
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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2017-03-15-02** **Date: 18-03-17**

**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

**Agency** : Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003.

**Customer's Reference** : BBMP/EE/BTP/WO/135/2016-17

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 15-03-17

**Sample ID No** : 2017-03-15-02/01

**Customer ID** : PCC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 17/03/2017

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PCC | M20 | 10/03/2017 | 17/03/2017 | 150.22 X 149.38 X 151.62 | 22440 | 8.175 | 412.9 | 18.4 | 17.6 |
| 2 | PCC | M20 | 10/03/2017 | 17/03/2017 | 150.72 X 150.27 X 150.22 | 22649 | 8.186 | 391.8 | 17.3 | |
| 3 | PCC | M20 | 10/03/2017 | 17/03/2017 | 150.98 X 150.82 X 150.75 | 22771 | 8.217 | 389.4 | 17.1 | |

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**Prepared by**
**Harsitha**

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2017-03-15-02** **Date: 08-04-17**

**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division.

**Agency** : Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003.

**Customer's Reference** : BBMP/EE/BTP/WO/135/2016-17

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 15-03-17

**Sample ID No** : 2017-03-15-02/02

**Customer ID** : PCC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 07/04/2017

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PCC | M20 | 10/03/2017 | 07/04/2017 | 150.72 X 150.78 X 151.09 | 22726 | 8.172 | 538.6 | 23.7 | 23.5 |
| 2 | PCC | M20 | 10/03/2017 | 07/04/2017 | 150.25 X 150.86 X 150.96 | 22667 | 8.127 | 541.7 | 23.9 | |
| 3 | PCC | M20 | 10/03/2017 | 07/04/2017 | 150.63 X 150.59 X 150.51 | 22683 | 8.164 | 517.2 | 22.8 | |

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**Prepared by**
**Harsitha**

**FOR CIVIL Pro.**

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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 02-03-2017** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/135/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/01 |
| **Sample Type** | : | Birla Super 53 grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 6, Determination of Compressive Strength, Clause 6<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 02-02-2017 to 02-03-2017 |

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 3.16 | – |
| 2 | Finess by Air permeablity method (m2/kg, Min) | 289.6 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.54 | – |
| 4 | Standard Consistency (%) | 28.0% | Not specified |
| 5 | Initial Setting time | 205 minutes | Not less than 30 minutes |



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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

**Lab ID** : **CP-2017-02-01-01** **Date: 02-03-2017**

**Sample ID No** : **2017-02-01-01/01**

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 6 | Final Setting time | 325 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 1.0mm | Not more than 10 mm |
| 8 | Compressive Strength | | |
| | 3 Days | 28.5N/mm$^2$ | Not less than 27 N/mm$^2$ |
| | 7 Days | 39.0N/mm$^2$ | Not less than 37 N/mm$^2$ |
| | 28 Days | 55.5N/mm$^2$ | Not less than 53 N/mm$^2$ |

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**Prepared by**
Harshitha

**FOR CIVIL Pro.**

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**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**


****End of Report****

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# TEST REPORT OF FINE AGGREGATE

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 08-02-17** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/135/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/03 |
| **Sample Type** | : | Fine Aggregate |
| **Reference to BIS codes** | : | IS: 383 - 1970 (RA2016) (Specification for Coarse and fine Aggregates from natural sources for concrete<br>IS: 2386 :1963(Part - 1, 2, 3) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 2: Estimation of Deleterious Materials and Organic Impurities.<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Abservation |
| **Date of test** | : | 02-02-17 |
| **Total weight taken** | : | 1000 grams |

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:1970 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 41 | 41 | 4.1 | 95.9 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 152 | 193 | 19.3 | 80.7 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 223 | 416 | 41.6 | 58.4 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 143 | 559 | 55.9 | 44.1 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 205 | 764 | 76.4 | 23.6 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 175 | 939 | 93.9 | 6.1 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 61 | 1000 | 100 | 0 | --- | --- | --- | --- |

**Result :The tested Sample Conforms to Grading Zone II**

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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2017-02-01-01** **Date: 08-02-17**

**Sample ID No** : 2017-02-01-01/03

## PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-1970 (RA2016) |
|---|---|---|---|
| 1 | Water Absorption(%) | 2.23 | _ |
| 2 | Specific Gravity | 2.58 | _ |
| 3 | Material finer than 75 micron(%) | 6.5 | Not more than 15 percent |

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Harshitha

**FOR CIVIL Pro.**

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 08-02-2017** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/135/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/02(b) |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383 - 1970 (RA2016) (Specification for Coarse and fine Aggregates from natural sources for concrete<br>IS: 2386 :1963(Part - 1, 2, 3) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 2: Estimation of Deleterious Materials and Organic Impurities.<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Abservation |
| **Date of test** | : | 02-02-17 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken:** **5000** **grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:1970 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 40 mm | 155 | 155 | 3.1 | 96.9 | 95-100 |
| 3 | 20 mm | 2658 | 2813 | 56.26 | 43.7 | 30-70 |
| 4 | 10 mm | 1276 | 4089 | 81.78 | 18.2 | 10-35 |
| 5 | 4.75 mm | 698 | 4787 | 95.74 | 4.3 | 0-5 |
| 6 | Pan | 213 | 5000 | 100 | 0.0 | --- |

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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2017-02-01-01** **Date: 08-02-2017**

**Sample ID No** : 2017-02-01-01/02(b)

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-1970 |
|---|---|---|---|
| 1 | Flakiness Index(%) | **9.5** | _ |
| 2 | Elongation Index(%) | **11.4** | _ |
| 3 | Specific Gravity | **2.64** | _ |
| 4 | Bulk Density(Loose) (Kg/l) | **1.51** | _ |
| 5 | Bulk Density(Compacted) (Kg/l) | **1.58** | _ |
| 6 | Water Absorption(%) | **0.22** | _ |

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**Prepared by**
Harshitha

**FOR CIVIL Pro.**

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 08-02-2017** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer Reference** | : | BBMP/EE/BTP/WO/135/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/02(a) |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383 - 1970 (RA2016) (Specification for Coarse and fine Aggregates from natural sources for concrete<br>IS: 2386 :1963(Part - 1, 2, 3) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 2: Estimation of Deleterious Materials and Organic Impurities.<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Abservation |
| **Date of test** | : | 02-02-17 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken:** **5000** **grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:1970 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 201 | 201 | 4.0 | 96.0 | 95-100 |
| 3 | 10 mm | 2698 | 2899 | 58.0 | 42.0 | 25-55 |
| 4 | 4.75 mm | 1982 | 4881 | 97.6 | 2.4 | 0-5 |
| 5 | Pan | 119 | 5000 | 100 | 0 | – |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2017-02-01-01** **Date: 08-02-2017**

**Sample ID No** : 2017-02-01-01/02(a)

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-1970 |
|---|---|---|---|
| 1 | Flakiness Index(%) | **11.6** | _ |
| 2 | Elongation Index(%) | **9.8** | _ |
| 3 | Specific Gravity | **2.61** | _ |
| 4 | Bulk Density(Loose) (Kg/l) | **1.53** | _ |
| 5 | Bulk Density(Compacted) (Kg/l) | **1.59** | _ |
| 6 | Water Absorption(%) | **0.28** | _ |
| 7 | Ten percent fine value(KN) | **182.5** | _ |
| 8 | Aggregate crushing Value(%) | **21.8** | Shall not exceed 45% by weight for aggregates used for concrete other than for wearing surface and 30% by weight for concrete for wearing surfaces such as runways, roads, pavements |
| 9 | Aggregate Impact Value(%) | **22.5** | Shall not exceed 45% by weight for aggregates used for concrete other than for wearing surface and 30% by weight for concrete for wearing surfaces such as runways, roads, pavements |

**Note:**
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All information furnished by Customer/Representative
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Samples will be disposed after 30 days from the date of issue of test certificate

**Prepared by**
Harshitha

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**FOR CIVIL Pro.**
**R KARTHIK RECHAN**
Authorized Signature
**Quality Manager**


*End of Report*

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# TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2017-02-01-01** **Date: 08-02-17** |
| **Customer** | : | Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Vidyaranyapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Varadarajanagara Burial ground in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division. |
| **Agency** | : | Executive Engineer, KRIDL, No.119, 11th Cross, Silvester Arcade, 3rd floor, East Park Road, Malleswaram, Bangalore-560003. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/135/2016-17 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-02-17 |
| **Sample ID No** | : | 2017-02-01-01/04 |
| **Sample Type/Size** | : | Solid concrete blocks of size (400X200X200)mm |
| **Reference to BIS codes** | : | IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification<br>Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10) |
| **Date of test** | : | 02-02-17 |

**BLOCK DENSITY:**

| Sl. No. | Measurement of overall Dimensions of Individual Blocks | | | Overall Volume of the Block in Cubic Centimetres | Weight of Oven Dried Block in Kilograms to the nearest 10 Gram | Block Density in Kg/cum*$10^6$ | Avg.Block Density in (Kg/cum) | As per IS 2185 (Part 1):2005 (RA 2010) |
|---|---|---|---|---|---|---|---|---|
| | Length | Breadth | Height | | | | | |
| | mm | mm | mm | ($Cm^3$) | Kg | $Kg/m^3$ | $Kg/m^3$ | |
| 1 | 401 | 202 | 200 | 16200 | 31.530 | 1946.2 | 1936.0 | Not less than 1800$Kg/m^3$ |
| 2 | 403 | 202 | 201 | 16363 | 31.890 | 1949.0 | | |
| 3 | 402 | 201 | 202 | 16322 | 31.220 | 1912.8 | | |

**WATER ABSORPTION:**

| Sl. No. | Wet weight after water absorption | Dry weight (Oven dry) | Water Absorption | Avg.Water Absorption | As per IS 2185 (Part 1):2005 (RA 2010) |
|---|---|---|---|---|---|
| | kg | kg | % | % | |
| 1 | 31.920 | 31.010 | 2.93 | 3.07 | Shall not be more than 10% by mass |
| 2 | 32.170 | 31.190 | 3.14 | | |
| 3 | 32.130 | 31.150 | 3.15 | | |

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**Lab ID** : **CP-2017-02-01-01** **Date: 08-02-17**

**Sample ID No** : **2017-02-01-01/04**

**DIMENSION ANALYSIS**

| Sl.no | Length mm | Breadth mm | Height mm | Requirement as per IS 2185(Part 1):2005 |
|---|---|---|---|---|
| 1 | 403 | 203 | 201 | Length : ± 5mm<br>Breadth : ± 3mm<br>Height : ± 3mm |
| 2 | 402 | 202 | 203 | |
| 3 | 401 | 201 | 200 | |
| 4 | 402 | 201 | 201 | |
| 5 | 401 | 203 | 203 | |
| 6 | 402 | 201 | 203 | |
| 7 | 402 | 202 | 201 | |
| 8 | 401 | 201 | 203 | |
| 9 | 402 | 203 | 201 | |
| 10 | 403 | 201 | 203 | |
| 11 | 402 | 203 | 201 | |
| 12 | 402 | 201 | 203 | |
| 13 | 401 | 202 | 201 | |
| 14 | 401 | 203 | 203 | |
| 15 | 402 | 200 | 202 | |
| 16 | 402 | 201 | 201 | |
| 17 | 403 | 203 | 201 | |
| 18 | 400 | 200 | 201 | |
| 19 | 401 | 201 | 203 | |
| 20 | 403 | 201 | 201 | |
| **Average of 20 blocks** | **402** | **202** | **202** | |



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**Lab ID** : **CP-2017-02-01-01** **Date: 08-02-17**

**Sample ID No** : 2017-02-01-01/04

**COMPRESSIVE STRENGTH:**

| Sl. No. | Size of solid block | | Area | Failure Load | Compressive strength | Average Compressive strength |
|---|---|---|---|---|---|---|
| | Length | Breadth | | | | |
| | mm | mm | ($mm^2$) | (KN) | $N/mm^2$ | ($N/mm^2$) |
| 1 | 403 | 203 | 81809 | 331.7 | 4.1 | 4.3 |
| 2 | 402 | 202 | 81204 | 376.8 | 4.6 | |
| 3 | 401 | 201 | 80601 | 354.8 | 4.4 | |
| 4 | 402 | 201 | 80802 | 387.1 | 4.8 | |
| 5 | 401 | 203 | 81403 | 310.8 | 3.8 | |
| 6 | 402 | 201 | 80802 | 315.8 | 3.9 | |
| 7 | 402 | 202 | 81204 | 376.8 | 4.6 | |
| 8 | 401 | 201 | 80601 | 310.9 | 3.9 | |

**As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)**

| Compressive strength | | |
|---|---|---|
| **Grade** | **Minimum average** | **Minimum Individual units.** |
| C (5.0) | 5.00 $N/mm^2$ | 4.00 $N/mm^2$ |
| C (4.0) | 4.00 $N/mm^2$ | 3.20 $N/mm^2$ |

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**Prepared by**
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Vidyaranyapura Sub Division
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CIVIL Pro Sig..... Date..... BANGALORE

**FOR CIVIL Pro.**
**R KARTHIK RECHAN**
Authorized Signatory
**Quality Manager**


****End of Report****

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